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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/254,407	02/07/2000	MICHAEL WILLIAM GRADY	101713-5025	6913
28977 7590 01/04/2010 MORGAN, LEWIS & BOCKIUS LLP 1701 MARKET STREET PHILADELPHIA, PA 19103-2921				
EXAMINER				
WHITE, EVERETT NMN				
ART UNIT		PAPER NUMBER		
1623				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/254,407

Applicant(s)

GRADY ET AL.

Examiner

EVERETT WHITE

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14, 15 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) 1-8, 11, 12, 14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9, 10 and 17-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notices of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 4, 2009 has been entered.

2. Applicants response filed December 4, 2009 has been received, entered and carefully considered. The response affects the instant application accordingly:

- (A) Claims 13 and 16 have been canceled; Claims 1-8, 11, 12, 14 and 15 are withdrawn from consideration.
- (B) Comments regarding Office Action have been provided drawn to:

- (I) 103(a) rejection, which is maintained for the reasons of record.

3. Claims 9, 10 and 17-22 are subjected to examination in the instant Office Action.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 9, 10 and 17-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tunc (US Patent No. 3,800,797, already of record) in view of Komai et al (US Patent No. 5,561,114, already of record) or Reich (US Patent No. 5,124,155, already of record) for the reasons disclosed below.

Applicants claim a wound dressing comprising a synthetic sulfated polysaccharide, wherein the sulfated polysaccharide is selected from the group consisting of sulfated hydroxyethyl cellulose, sulfated carboxymethyl cellulose and sulfated oxidized regenerated cellulose, said synthetic sulfated polysaccharide being present in an amount sufficient to bind matrix metalloproteinases, wherein at least one sulfate group on each saccharide residue of said synthetic sulfated polysaccharide was converted from a hydroxyl group.

The Tunc patent discloses a barrier film which has utility in connection with absorbent products of various applications that include "dressings" (see column 1, line 9). The Tunc patent discloses the barrier film as comprising a film of sulfated alkali cellulose ether resin, wherein the sulfated alkali cellulose ether of the resin may be selected as sodium hydroxyethyl cellulose sulfate, which embraces instant Claim 17 when the instantly claimed wound dressing comprises the sulfated hydroxyethyl cellulose. The Tunc patent also discloses the barrier film thereof as being useful in

connection with absorbent products that include napkins and diapers, which embrace the woven, non-woven, sponge or knitted fabric recited in instant Claim 9.

The instantly claimed wound dressing differs from the dressing of the Tunc patent by claiming that the sulfated polysaccharide thereof comprises at least one sulfate group on each saccharide residue of said sulfated polysaccharide.

The Komai et al patent discloses cellular fibronectin adsorbent utilizing a nonwoven cellulose sulfate fabric wherein the cellulose sulfate has a sulfation degree of substitution (DS) up to 1.5 (see column 4, lines 18-20), and further teaches cellulose sulfate fibers having a sulfation degree of substitution (DS) up to 2.9 can be selectively obtained (column 3, lines 16-20), which embraces the amount of sulfate groups recited in instant Claims 17 and 18, especially with regard to the broad recitation in Claim 18 for the phrase "about 3 to about 4 sulfate groups". The Komai et al patent shows that the use of cellulose sulfate compounds with fibronectin materials, which include blood, plasma, serum and extracts of various organs in which the existence of fibronectin has been established is known in the art.

The instantly claimed invention also differs from the Tunc patent by further claiming that the wound dressing is in the form of solid complex with collagen.

The Reich patent shows that dressings in the form of solid complex with collagen are well known in the art. See the abstract of the Reich patent wherein wound healing dressings in the form of sheets, strips, wedges, strands or I-shaped cross sections are prepared. Also see column 4, lines 61 and 62 of the Reich patent wherein the dressing thereof further comprises collagen.

One of ordinary skill in this art would be motivated to combine the teaching of the Tunc patent with the teaching of the Komai et al patent since both documents disclose using nonwoven cellulose sulfate with fibronectin material or in wounds. One of ordinary skill in this art would also be motivated to combine the teaching of the Tunc patent with the teaching of the Reich patent since both documents disclose preparation of wound dressings.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the sulfated hydroxyethyl cellulose used in the dressing of the Tunc patent with a sulfated cellulose compound having a DS of at least one in view of the recognition in the art, as evidenced by the Komai et al patent, that the sulfated cellulose fabric is an effective material for use as an adsorbent. It further would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate into the dressing comprising a sulfated hydroxyethyl cellulose of the Tunc patent collagen in view of the recognition in the art, as evidenced by the Reich patent, that collagen exhibits beneficial effects in wound healing, such as by providing a matrix for cell migration and growth.

Response to Arguments

6. Applicant's arguments filed December 4, 2009 have been fully considered but they are not persuasive. Applicants argue against the rejection on the ground that the Tunc and Komai patents teaches away from their combination since the Komai patent discloses a sulfation degree up to 1.5 and the Tunc patent teaches minimizing the degree of sulfation to below 0.3. This argument is not persuasive since the Komai

patent discloses using cellulose sulfates having a degree of substitution as low as 0.2 (see column 3, 5th paragraph of the Komai patent).

Applicants also argue that the Komai patent presents conflicting information regarding degree of sulfation since the Komai patent discloses using sulfated cellulose having a sulfation degree up to 1.5, and up to 2.9 in some instances and further teaches the use of sulfated cellulose having a degree of sulfation that equal 0.2. This argument is not persuasive since this wide range of degree of sulfation in the Komai patent is explained in the Komai patent as pointed out by Applicants in their remarks. See column 3, lines 50-55 of the Komai patent wherein Komai discloses that "the degree of sulfation for the cellulose sulfate fiber to be used should be selected in consideration of the degree of possible reduction in fiber strength and the required adsorptive capacity of the product nonwoven fabric in its application as the adsorbent of the invention." No conflict in the information disclosed in the Komai patent is noted.

The Chaidedgumjorn et al reference (PTO-892) cited herein as evidence, discusses fully sulfated polysaccharides, where cellulose has a DS of 2.9.

The Reich patent is cited to show that dressings in the form of solid complex with collagen are well known in the art. Accordingly, the rejection of Claims 9, 10 and 17-22 under 35 U.S.C. 103(a) as being unpatentable over the Tunc patent in view of the Komai et al patent or Reich patent is maintained for the reasons of record.

Reference Further Showing the State of the Art

The Chaideedgumjorn et al reference (PTO-892), which discusses fully sulfated polysaccharides, is cited to further show the state of the art. Note that Chaideedgumjorn et al. teach "fully sulfated" polysaccharides, where cellulose has a DS of 2.9.

Summary

7. Claims 9, 10 and 17-22 are rejected; Claims 1-8, 11, 12, 14 and 15 are withdrawn from consideration as being directed to non-elected inventions.

Examiner's Telephone Number, Fax Number, and Other Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is 571-272-0660. The examiner can normally be reached on 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Everett White/

Examiner, Art Unit 1623

/Shaojia Anna Jiang/

Supervisory Patent Examiner, Art Unit 1623